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NOTES FROM PACIFIC COAST OBSERVATORIES.

TESTS OF THE SNOW TELESCOPE.

As the success of the solar work on Mt. Wilson depends in large measure upon the quality of the images given by the Snow telescope, the tests of this instrument made since the close of the rainy season have proved of great interest to the members of the observatory staff. From previous experience it was recognized that the selection of a suitable design for the telescope-house is of vital importance, in view of the difficulty of preventing unequal heating of the air in the path of the beam. Again, it was a question whether the cœlostat would prove to be sufficiently high above the ground to escape the disturbing effect of the heated air at low levels. The serious expense involved in the construction of larger piers had limited the height of the cœlostat to about twenty feet, although observations of the Sun made from a tree with a small telescope indicated that a much greater elevation would probably be advantageous. Finally, the distortion of the mirrors by the Sun's heat was known to be a serious source of danger.

While it is still too early to express final conclusions, or to give the details of the tests, it may be said that the performance of the telescope has decidedly surpassed our expectations. The louver construction of the telescope-house seems to afford the desired protection against heating, and the possibility of raising and lowering the inner canvas walls has proven of great service. Ordinarily the best definition is obtained when the inner wall on the side toward the Sun is raised, and the wall on the opposite side of the house is lowered. Many comparative tests of the seeing have been made with the aid of a $3\frac{1}{4}$ -inch visual telescope, mounted on a tripod support near the cœlostat. In all cases the image has been no less sharply defined with the Snow telescope than with the small refractor—cer-

tainly a most satisfactory result. On many occasions the solar image has been beautifully sharp, and good photographs of calcium and hydrogen flocculi have been made with a spectroheliograph constructed for temporary use, pending the completion by the Zeiss Optical Works of large prisms for the permanent spectroheliographs. Professor BARNARD states that the Moon, as observed one night with the Snow telescope, was as well defined as he had ever seen it with the 40-inch Yerkes refractor. Star-images are also excellent, except when the instrument has been used during the late afternoon in work on the Sun. In such a case the mirrors do not cool down to a normal condition until late in the evening, and during the transition state the star-images are curiously distorted.

It had been anticipated that difficulty would be experienced from changes in the focal length of the telescope, due to heating of the mirrors, and this has proved to be the case. Except in the early morning hours, however, the change in focal length is small and of little importance. Electric-heating apparatus is now being provided for the purpose of maintaining the mirrors during the night at such a temperature as to give the least change of figure when they are exposed to the Sun in the morning.

GEORGE E. HALE.

SOLAR OBSERVATORY, MT. WILSON, CAL.

GIFT FROM MR. D. O. MILLS.

I take great pleasure in announcing that Mr. D. O. MILLS has provided means for continuing the work of the D. O. Mills Expedition to the Southern Hemisphere for a period of five years additional to that covered by the original programme. This generous action provides also for suitable addition to the equipment of the observatory now located on the summit of San Cristobal, near Santiago, Chile; for the salaries and traveling expenses of the astronomer in charge and two assistants; and for running expenses.

Important items of equipment will be spectrographs of lower dispersion in order that the determination of radial velocities of stars in the southern sky may be extended to considerably fainter stars than can be attacked with the present powerful three-prism spectrograph.